DEPARTMENT OF TRANSPORTATION
DIVISION OF ENGINEERING SERVICES
Office of Structural Materials
Quality Assurance and Source Inspection

Bay Area Branch
690 Walnut Ave.St. 150
Vallejo, CA 94592-1133
(707) 649-5453
(707) 649-5493

Contract #: 04-0120F4
Cty: SF/ALA Rte: 80 PM: 13.2/13.9
File #: 69.28

WELDING INSPECTION REPORT

Resident Engineer: Pursell, Gary
Address: 333 Burma Road
City: Oakland, CA 94607

Report No: WIR-004464
Date Inspected: 02-Nov-2008

Project Name: SAS Superstructure
Prime Contractor: American Bridge/Fluor Enterprises, a JV
Contractor: Zhenhua Port Machinery Company, Ltd (ZPMC), Changxing Island

OSM Arrival Time: 1430
OSM Departure Time: 2230
Location: Shanghai, China

CWI Name:	Sun Bo			**CWI Present:**	☑ Yes	☐ No	
Inspected CWI report:	☐ Yes	☐ No	☑ N/A	**Rod Oven in Use:**	☑ Yes	☐ No	☐ N/A
Electrode to specification:	☑ Yes	☐ No	☐ N/A	**Weld Procedures Followed:**	☐ Yes	☑ No	☐ N/A
Qualified Welders:	☑ Yes	☐ No	☐ N/A	**Verified Joint Fit-up:**	☐ Yes	☑ No	☐ N/A
Approved Drawings:	☑ Yes	☐ No	☐ N/A	**Approved WPS:**	☑ Yes	☐ No	☐ N/A
				Delayed / Cancelled:	☐ Yes	☑ No	☐ N/A

Bridge No: 34-0006
Component: OBG

Summary of Items Observed:

Caltrans Quality Assurance (QA) Inspector, Larry Viars was present to perform Ultrasonic Testing (UT) of Orthotropic Box Girder (OBG) components, for the San Francisco Oakland Bay Self Anchored Suspension Bridge, at Zhenhua Port Machinery Company (ZPMC) facility on Changxing Island.

Heavy Machinery Bay 3:

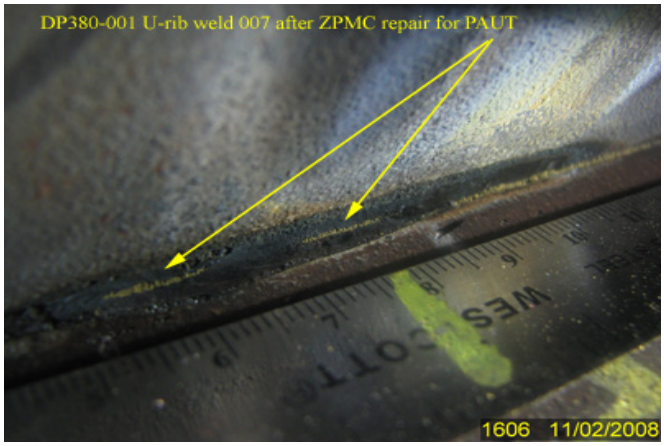
Caltrans QA performed visual inspection of Deck Panel DP380-001 weld 007 repair area (Y location 75) previously rejected with phased array and visual inspection for horizontal cracks on the root pass open to the surface. Cracks were first observed on 10/30/08 during phased array testing and found noncompliant with phased array ultrasonic testing. Visual inspection was performed of the area and two horizontal cracks with a combined length of approximately 20 mm were found and verified with Magnetic particle testing. Cracks were shown to ZPMC QC Sun Bo, Wang Lu and Kelvin Cheung. Caltrans QA observed that repair had been made but the crack on the root was not removed. ZPMC QC Lei Tao stated that repair performed only requires the weld to be excavated to a depth of 9.6 mm from the weld and that ZPMC considered this repair complete. An incident report was issued for ZPMC knowingly violating the following applicable references AWS D1.5 (2002) section 6.26.2 which states “Welds that are subject to RT or MT in addition to visual inspection shall have no cracks and shall be unacceptable if the RT or MT shows any types of discontinuities described in 6.26.2.1, 6.26.2.2, 6.26.2.3, or 6.26.2.4”, AWS D1.5 (2002) section 3.7.2.4 which states “Cracks in the weld or base metal, the extent of the crack shall be ascertained by the Use of MT, PT or other equally positive means; the metal shall be removed for the full extent of the crack plus 50 mm beyond each end of the crack.” ZPMC repair procedure for closed ribs section 2.5.2 which states “Carefully remove crack by grinding in accordance with AWS D1.5 Section 3.7.2.4. Please see the

photo below which shows the above mentioned crack after ZPMC weld repair.

OBG Assembly:

This Quality Assurance (QA) inspector arrived at ZPMC in Shanghai China for observation of Orthotropic Bridge Girders (OBG) and Self Anchored Suspension (SAS) Bridge. This QA inspector received notification from day shift task leader to perform conventional Ultrasonic (A scan) Inspection for tack welds on deck panels. The inspection is preliminary prior to using the phased array system to verify indications found with conventional Ultrasonic testing. This QA inspector performed UT on deck panel DP108-002-001, weld 1 scanned 8 locations with 0 indications, weld 2 scanned 8 locations with 2 indications, weld 3 scanned 8 locations with 0 indications, weld 4 scanned 8 locations with 4 indications, weld 5 scanned 8 locations with 1 indication, weld 6 scanned 8 locations with 2 indications, weld 7 scanned 8 locations with 0 indications, weld 8 scanned 8 locations with 4 indications. Caltrans QA performed UT on deck panel DP243-001, weld 1 scanned 8 locations with 0 indications, weld 2 scanned 8 locations with 0 indications, weld 3 scanned 8 locations with 0 indications, weld 4 scanned 8 locations with 1 indication, weld 5 scanned 8 locations with 0 indications, weld 6 scanned 8 locations with 0 indications, weld 7 scanned 8 locations with 0 indications, weld 8 scanned 8 locations with 0 indications, weld 9 scanned 8 locations with 0 indications and weld 10 scanned 8 locations with 0 indications. Total tack welds inspected were 160 with 16 indications located in the area of interest (10 %). This QA inspector was informed by the task leader that a TL-6027 was not required at this time.

No other activities observed.



Summary of Conversations:
As identified within the contents of this report.
Comments
This report is for the purpose of determining conformance with the contract documents and is not for the purpose of making repair or fit for purpose recommendations. Should you require recommendations concerning repairs or remedial efforts please contact Peter Dautermann, 150 0219 9593, who represents the Office of Structural Materials for your project.

Inspected By: Viars,Larry Quality Assurance Inspector

WELDING INSPECTION REPORT

(Continued Page 3 of 3)

Reviewed By: Wright,Mark QA Reviewer